PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of	Docket No: Q78201
Yutaka SHIBAHASHI, et al.	
Appln. No.: 10/694,006	Group Art Unit: 3711
Confirmation No.: 3669	Examiner: Alyssa M. HYLINSKI
Filed: October 28, 2003	

For: METHOD FOR ALTERNATELY EXPRESSING COLOR-MEMORIZING PHOTOCHROMIC FUNCTION IN TOY ELEMENT, AND AN ALTERNATELY COLOR-MEMORIZING PHOTOCHROMIC TOY

REPLY BRIEF PURSUANT TO 37 C.F.R. § 41.41

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.41, Appellant respectfully submits this Reply Brief in response to the Examiner's Answer dated March 17, 2010. Entry of this Reply Brief is respectfully requested.

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STATUS OF CLAIMS

Claims 1 and 3-16 are pending, with claim 2 being canceled.

Claims 9-14 have been withdrawn, pursuant to the Restriction Requirement of June 12, 2006.

Claims 1, 3, 6-7, and 15-16 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Reid (U.S. Patent No. 4,503,177), Mullis (U.S. Patent No. 5,436,115), Gordon (U.S. Patent No. 2,460,221), and Tomonaga (U.S. Application Publication No. 2002/0114956).

Claim 8 also stands rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Reid, Mullis, Gordon, and Tomonaga.

Claims 4 and 5 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Reid, Mullis, Gordon, Tomonaga, and Kamada (U.S. Patent No. 5,208,132).

Appellants are appealing the above rejections of claims 1, 3-8, and 15-16.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Appellants respectfully request the review of the following rejections:

I. The rejection of claims 1, 3, 6-7, and 15-16 under 35 U.S.C. § 103 as allegedly being unpatentable over Reid (U.S. Patent No. 4,503,177), Mullis (U.S. Patent No. 5,436,115), Gordon (U.S. Patent No. 2,460,221), and Tomonaga (U.S. Application Publication No. 2002/0114956).

II. The rejection of Claim 8 under 35 U.S.C. § 103 as allegedly being unpatentable over Reid, Mullis, Gordon, and Tomonaga.

III. The rejection of Claims 4 and 5 under 35 U.S.C. § 103 as allegedly being unpatentable over Reid, Mullis, Gordon, Tomonaga, and Kamada (U.S. Patent No. 5,208,132).

ARGUMENT

Appellants wish to address issues raised by the Examiner's Answer. In particular, (1) the Examiner improperly "grouped" three of Appellants' arguments together in the Examiner's Answer, and thus failed to address or rebut some of Appellants' arguments as set forth in the Appeal Brief; (2) the Examiner presented a new, broader, and improper interpretation of Gordon; (3) the Examiner's position fails to take into consideration the fact that references must be properly combinable in order to render a claim obvious; and (4) Appellants again disagree with the Examiner that rejections are not the result of hindsight reasoning.

I. The Examiner has failed to address or rebut some of Appellants' arguments as set forth in the Appeal Brief

In the Response to Argument section of the Examiner's Answer, on pages 6-7, the Examiner improperly groups Appellants' arguments I, III, and IV (as set forth in the Appeal Brief) instead of addressing each of Appellants' arguments on their own. In particular, Appellants argued in the Appeal Brief that the photochromic compounds disclosed in Reid, Mullis, and Tomonaga are distinct from the luminescent compounds in Gordon (heading (A)(I) in the Appeal Brief); that the color changing means in Gordon do not render obvious the presently recited color changing means (heading (A)(III) in the Appeal Brief); and that Reid, Mullis, Tomonaga, and Gordon are nonanalogous art (heading (A)(IV) in the Appeal Brief). The Examiner improperly grouped these arguments as a single argument that "Gordon is nonanalogous art." *See* Examiner's Answer, at page 6.

The Examiner's improper grouping of these three arguments permitted the Examiner to avoid addressing Applicants' individual arguments with respect to the fact that (1) Reid, Mullis, and Tomonaga are distinct from the luminescent compounds in Gordon (heading (A)(I) in the Appeal Brief); and (2) the color changing means in Gordon do not render obvious the presently recited color changing means.

A. Reid, Mullis, and Tomonaga are distinct from the luminescent compounds in Gordon

With respect to Appellants' point that the photochromic compounds disclosed in Reid, Mullis, and Tomonaga are distinct from the luminescent compounds in Gordon, Appellants again respectfully submit that a person having ordinary skill in the art would not recognize that the teachings from Gordon, which relates to luminescent compounds, are applicable to teachings related to photochromic compounds. Photochromic compounds induce a color change, whereas luminescence relates to the energy state decay of an excited atom. These are distinct phenomena. *See* (1) *The Macmillan Encyclopedia of Physics*; and (2) *Principles and Applications of Photochemistry*, both submitted with the Appeal Brief, and both discussed on page 12 of the Appeal Brief.

As discussed in the Appeal Brief, the luminescent properties of Gordon are distinguished from the photochromic properties of the other cited art and from the presently claimed invention because in the remaining cited art and in the presently claimed invention, the color change between the coloring state and decolorizing state is visible in a well-lighted area. On the other

hand, the luminescent product in Gordon is visible in a dark area (i.e., is a glow-in-the-dark product). *See also* pages 11-13 of the Appeal Brief.

The Examiner failed to address this argument, which Appellants respectfully submit is a basis for reversing the pending rejections.

B. The color changing means in Gordon do not render obvious the presently recited color changing means

With respect to Appellants' argument that the color changing means in Gordon do not render obvious the presently recited color changing means, Appellants again refer to Figs 1-4 discussed in and submitted with the Appeal Brief. *See* Appeal Brief, pages 14-16. As background, Gordon discloses a luminescent amusement device that contains a light sensitive layer containing a light accumulating material, such as a zinc sulfide. Even though Gordon relates to luminescent compounds, the Examiner has cited Gordon for its alleged teaching of a color changing means as recited in the present claims. To illustrate that a person having ordinary skill in the art would not understand the color changing means in Gordon to correspond to the presently recited color changing means, Appellants refer to Figs. 1-4, as submitted with the Appeal Brief. For the ease of the Board's reference, Appellants describe these figures again, below.

Figs. 1-4 compare a printing ink having the presently recited diarylethene photochromic compound with a printed material made using a printing ink containing zinc sulfide, such as that disclosed within Gordon.

As can be seen from the Figures, when the printed material is exposed to sunlight, the picture having the diarylethene photochromic compound is visible. However, the picture having the zinc sulfide is not visible. See Fig. 1. Conversely, when a sheet having an ultraviolet ray absorbent is put on top of the printed material and is exposed to sunlight, the picture having the diarylethene photochromic compound is not visible, either. See Fig. 2.

When a red sheet, as described in Gordon, is put on top of the printed material in Fig. 1 and exposed to sunlight, the picture having the zinc sulfide does not change and is not visibly identifiable as anything. See Fig. 3. On the other hand, after the printed material is exposed to sunlight, the picture having zinc sulfide is visible in the dark (i.e., it is glow-in-the-dark), whereas the diarylethene image is not visible. See Fig. 4 (showing the images as they appear in the dark after exposure to sunlight).

In view of the above, a person having ordinary skill in the art would not recognize that the color changing means in Gordon (relating to luminescent compounds) would perform a similar function when used in a photochromic application. In fact, Figs. 1-4 are indicative of the fact that the color changing means in Gordon has a different effect on the image in Gordon than it would have on a photochromic compound. Thus, a person having ordinary skill in the art would not understand that the color changing means in Gordon was useful as a color changing means in a photochromic application.

The Examiner has failed to address this argument, which Appellants respectfully submit is a basis for reversing the pending rejections.

II. The Examiner's new, broader interpretation of Gordon is improper

In the Examiner's Answer, the Examiner presented a new interpretation of Gordon - one which is unsupported by a reasonable interpretation of Gordon and which is also broader than the interpretations previously advanced by the Examiner.

In particular, on page 7 of the Examiner's Answer, the Examiner states that "Gordon relates to a way of affecting the type of light to which a light sensitive substrate is subjected in order to produce a desired change or effect." This interpretation of Gordon is unsupported by a reasonable reading of the reference. There is no disclosure or suggestion within Gordon relating to "the type of light to which a light sensitive substrate is subjected in order to produce a desired change or effect." Instead, Gordon relates to the specific creation of a luminescent effect on an article. There is no discussion of "the type of light" which may be used, and the only disclosed or suggested "desired change or effect" is a luminescent change. Gordon does not support the broad reading suggested by the Examiner.

Appellants also respectfully submit that the Examiner's new interpretation of Gordon is broader than the Examiner's previous characterization of Gordon ("Gordon relate(s) to means of creating interesting visual effects on light sensitive substrates.") (see page 6 of the Office Action of July 20, 2009). However, the Examiner's previous interpretation of Gordon was also improperly broad because the only "interesting visual effect" disclosed or suggested by Gordon is a luminescent effect. Thus, Gordon does not disclose or suggest multiple "effects."

It is respectfully submitted that the Examiner's new characterization of Gordon is an attempt to cast in Gordon in such a broad light so as to make it combinable with the other cited

references. However, because the Examiner's interpretations of Gordon are improperly broad, the Examiner has also overstated the combinability of the cited references. Appellants reiterate their arguments that the cited references would not be combined because, as discussed in the Appeal Brief, (1) the photochromic compounds disclosed in Reid, Mullis, and Tomonaga are distinct from the luminescent compounds in Gordon, and thus there is no reason to combine the teachings of the references as set forth in the Office Action; (2) the color changing means in Gordon do not render obvious the presently recited color changing means; and (3) Reid, Mullis, Tomonaga, and Gordon are nonanalogous art. *See* Appeal Brief, pages 10-16.

III. The Examiner's position fails to understand that references must be properly combinable in order to render a claim obvious

On pages 7 and 8 of the Examiner's Answer, the Examiner states that "the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references." However, this is not entirely correct, as references must be "properly combinable" in order to support an obviousness rejection. *See, e.g., Chapman v. Casner*, 315 Fed. Appx. 294, 297 (Fed. Cir. 2009) ("claim 96 would have been obvious if properly-combinable references disclosed conditions suitable to promote reaction of 8,14-dihydroxy to 14-hydroxy") (non-precedential).

Appellants have submitted reasons why, contrary to the Examiner's position, the cited art is not properly combinable. In particular, (1) the photochromic compounds disclosed in Reid, Mullis, and Tomonaga are distinct from the luminescent compounds in Gordon, and thus there is

no reason to combine the teachings of the references as set forth in the Office Action; (2) Reid and Tomonaga are incombinable with Mullis because Mullis discloses an irreversible color change, as opposed to a reversible color change; (3) the color changing means in Gordon do not render obvious the presently recited color changing means; and (4) Reid, Mullis, Tomonaga, and Gordon are nonanalogous art. *See* Appeal Brief, pages 10-16.

IV. The rejections are the result of hindsight reasoning

In the Examiner's Answer, the Examiner disagrees with Appellants' position that the rejection was improperly based on hindsight. However, especially in view of the arguments set forth above in the present Reply Brief, Appellants submit that the Examiner is mistaken.

As discussed in the Appeal Brief, the Examiner cites the color changing means in Gordon, yet does not pay attention to the fact that in Gordon, the color changing means is a color changing means for a luminescent (as opposed to a photochromic) material. The Examiner cites the toy of Mullis, yet does not say anything about the fact that the color changing mechanism in Mullis is irreversible, which is contrary both to the other cited references and to the present claims. The Examiner cites the reversible color changing mechanism in Reid, but does not explain how the merely prophetic portion that is cited ("In **certain circumstances** it **may** be possible to use radiation of a different wavelength or band of wavelengths to erase an image," *see* Reid at column 4, lines 18-20, emphasis added) would lead a person having ordinary skill in the art to the presently claimed invention, or even enable a person having ordinary skill in the art to practice the presently claimed invention.

Accordingly, Appellants again respectfully submit that the piecemeal application of the references indicates that improper hindsight reasoning was the basis of the rejections.

CONCLUSION

For the above reasons as well as the reasons set forth in the Appeal Brief, Appellant respectfully requests that the Board reverse the Examiner's rejections of all claims on Appeal. An early and favorable decision on the merits of this Appeal is respectfully requested.

Respectfully submitted,

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